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Mangrove red snapper nursery and grow-out

Aquaculture Department, Southeast Asian Fisheries Development Center

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Is **SNAPPER** farming profitable?

Technical information of snapper grow-out culture in ponds using formulated diet

Project duration (years)	5
Area (ha)	0.422
Stocking density (per ha)	5,000
Culture period (mo)	6
Croppings per year	2
Total stocks per crop	2,110
Survival rate (%)	100
Feed conversion ratio	2.5
Average weight at harvest (g)	425
Production per crop (kg)	896.75
Total feeds per crop (kg)	2,242
Cost of feed/kg (PhP)	55
Cost of juveniles/piece (4" per piece, PhP 5/in)	20
Average farm gate price (PhP/kg)	250

Costs-and-returns

Total variable cost per year (PhP)	341,150
Total fixed cost per year (PhP)	29,407
Net income per year (PhP)	77,818
Internal rate of return (%)	221
Return-on-investment (%)	203
Payback period (years)	0.46

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AEM 53 Grow-out culture of mangrove red snapper (*Lutjanus argentimaculatus* Forsskal, 1775) in ponds Eliseo Coniza, Mae Catacutan, Pedrita Caballero (2012) 30 pp
This extension manual tells of the procedures in farming mangrove red snapper and its costs-and-returns.

AEM 54 Cage nursery of high-value fishes in brackishwater ponds (sea bass, grouper, snapper, pompano) Jocelyn Madrones-Ladja et al (2012) 24 pp
This extension manual describes nursery pond requirements, nursery rearing procedures, common diseases of young marine fish, and economic analysis of cage nursery as an enterprise separate from hatchery and grow-out culture.

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MANGROVE RED SNAPPER

Nursery and Grow-out

Southeast Asian Fisheries Development Center
AQUACULTURE DEPARTMENT
www.seafdec.org.ph

Why **SNAPPER**?

Mangrove red snapper (locally known as *maya-maya*, *mangagat*, *managat*, and *gingaw*) is a high-value marine fish with great potential for export to Japan, Singapore, Hong Kong, China, Taiwan, and the USA. It is a fast growing fish which can be reared easily in captivity and can survive well in all phases of culture, from hatchery to grow-out.

How to culture **SNAPPER**?

Nursery in netcages

- Stock 2.5 cm fingerlings at a density of 150-200 fingerlings/m^3.
- Provide black net ribbons over the cage and set PVC cuttings one over the other at the bottom of the cage as shelter of the fish.

Net cages in a nursery pond

PVC cuttings as fish shelter

- Cover each cage with old or used nets, coconut fronds or nipa shingles to protect the stock from direct sunlight and predator birds.
- Feed fish with formulated diets at 12% of average body weight (ABW) per day, gradually decreasing to 4% of ABW. Spread out feeding to 4-5 times per day to make feed always available to fish and reduce cannibalism.
- Harvest snapper juveniles when they reach the weight of 40-50 g.

Grow-out in ponds

- Drain and level the pond, making the pond bottom slope gradually towards the gate. Soil-seal the pond gate by filling mud between rows of slabs. Repair and install gate screens and slabs. Eradicate unwanted species using a mixture of hydrated lime plus ammonium sulfate at 5:1 ratio, and apply on days with intense sunlight. Dry the pond for about 2-3 weeks until the soil cracks. Apply hydrated lime at 0.5-1 ton/ha. Install bamboo catwalks. Let brackishwater flow into the pond during high tide.

Application of lime in a pond

Acclimation of snapper juveniles in a pond

- Stock 5,000 pieces of snapper juveniles in a one-hectare pond.
- Change 50-60% of the pond water 4-6 times every high tide. During low tide, it may be necessary to pump water to maintain a water depth of 1 m.
- Give daily feed ration at 8 a.m, 12 noon, and 4 p.m. with 30%, 30%, and 40% allocation, respectively.
- Harvest snapper after six months or when the fish attain the preferred marketable size of ≥ 400 g.

Is **SNAPPER** nursery production profitable?

Technical assumption for a cage-nursery production using formulated diets

Project duration (years)	5
Total pond area for stocking (m^2)	4,000
Number of cages (2x3x1.3 m^3)	8
Number of crops/year	3
Stocking density (pcs/m^3)	150
Total number of stock per crop	7,200
Days of culture	90
Feed conversion ratio	1.8
Survival rate	90%
Total recovery at harvest per crop (pcs)	6,480
ABL at harvest (cm)	10
Selling price per cm body length (PhP)	2
Farm gate selling price (PhP/pc)	20
Gross value of harvest per crop (PhP)	129,600

Costs-and-returns

Total variable cost per year (PhP)	195,126
Total fixed cost per year (PhP)	91,092
Net income per year (PhP)	102,582
Internal rate of return (%)	317
Return-on-investment (%)	281
Payback period (years)	0.31

Feeding of snappers stocked in a pond

Harvest of snapper